

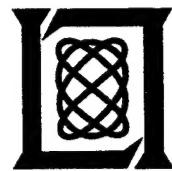
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1 January — 31 December 1999**

Volume 25

31 December 1999

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JOURNAL ARTICLES

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7351	Generalized Radar Clutter Model	Shnidman, D.A.	IEEE Trans. Aerosp. Electron. Syst., Vol. 35, No. 3, July 1999, pp. 857-865.
7365	Wide-Band Radiometry for Remote Sensing of Oil Films on Water	Brown, E.R. McMahon, O.B. Murphy, T.J. Hogan, G.G. Daniels, G.M. Hover, G.	IEEE Trans. Microw. Theory Tech., Vol. 46, No. 12, December 1998, pp. 1989-1996.
7375	SAR Image Compression with the Gabor Transform	Baxter, R.A.	IEEE Trans. Geosci. Remote Sens., Vol. 37, No. 1, January 1999, pp. 574-588.
7401AA	Optimum Phase-Only Adaptive Nulling	Smith, S.T.	IEEE Trans. Signal Process., Vol. 47, No. 7, July 1999, pp. 1835-1843.
7428	Forward-Backward Averaging in the Presence of Array Manifold Errors	Zatman, M.A. Marshall, D.	IEEE Trans. Antennas Propag., Vol. 46, No. 11, November 1998, pp. 1700-1704.
7429	Comment on "Constrained Hung-Turner Adaptive Beamforming Algorithm with Additional Robustness to Wide-Band and Moving Jammers"	Zatman, M.A.	IEEE Trans. Antennas Propag., Vol. 46, No. 12, December 1998, pp. 1897-1898.
7447A	Improved Adaptive Clutter Cancellation Through Data-Adaptive Training	Rabideau, D.J. Steinhardt, A.O.	IEEE Trans. Aerosp. Electron. Syst., Vol. 35, No. 3, July 1999, pp. 879-891.
7452A	Automatic Target Recognition Using Enhanced Resolution SAR Data	Novak, L.M. Owirka, G.J. Weaver, A.L.	IEEE Trans. Aerosp. Electron. Syst., Vol. 35, No. 1, January 1999, pp. 157-175.

Journal Articles

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7453A	Radar Detection in Multipath	Wilson, S.L. Carlson, B.D.	IEE Proc. Radar Sonar Navig., Vol. 146, No. 1, February 1999, pp. 45-54.
7471	Input Impedance Conditions for Minimizing the Noise Figure of an Analog Optical Link	Ackerman, E.I. Cox, C.H. III Betts, G.E. Roussell, H.V. Ray, K.G. O'Donnell, F.J.	IEEE Trans. Microw. Theory Tech., Vol. 46, No. 12, December 1998, pp. 2025-2031.
7474A	Ultrawide-Band Coherent Processing	Cuomo, K.M. Piou, J.E. Mayhan, J.T.	IEEE Trans. Antennas Propag., Vol. 47, No. 6, June 1999, pp. 1094-1107. ADA360760
7492	Microchip Lasers	Zayhowski, J.J.	Opt. Mater., Vol. 11, No. 2-3, January 1999, pp. 255-267 (Papers from the Summer School on Miniature Coherent Light Sources in Dielectric Media, 2-6 June 1997).
7502	Coherent Spatial Filtering for SAR Detection of Stationary Targets	Jao, J.K. Lee, C.F. Ayasli, S.	IEEE Trans. Aerosp. Electron. Syst., Vol. 35, No. 2, April 1999, pp. 614-626.
7510	Effect of Growth Temperature on Point Defect Density of Unintentionally Doped GaN Grown by Metalorganic Chemical Vapor Deposition and Hydride Vapor Phase Epitaxy	Joshkin, V.A. Parker, C.A. Bedair, S.M. Muth, J.F. Shmagin, I.K. Kolbas, R.M. Piner, E.L. Molnar, R.J.	J. Appl. Phys., Vol. 86, No. 1, 1 July 1999, pp. 281-288.

Journal Articles

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7511A	Statistical Analyses of Measured Radar Ground Clutter Data	Billingsley, J.B. Farina, A. Gini, F. Greco, M.V. Verrazzani, L.	IEEE Trans. Aerosp. Electron. Syst., Vol. 35, No. 2, April 1999, pp. 579-593.
7513	Atmospheric Compensation and Tracking Using Active Illumination	Higgs, C. Barclay, H.T. Murphy, D.V. Primmerman, C.A.	Linc. Lab. J., Vol. 11, No. 1, 1998, pp. 5-26. ADA361046
7516	An Adaptive Microwave Phased Array for Targeted Heating of Deep Tumours in Intact Breast: Animal Study Results	Fenn, A.J. Wolf, G.L. Fogle, R.M.	Int. J. Hyperth., Vol. 15, No. 1, January/February 1999, pp. 45-61.
7517	Modal Scintillation Index: A Physics-Based Statistic for Acoustic Source Depth Discrimination	Premus, V.E.	J. Acoust. Soc. Am., Vol. 105, No. 4, April 1999, pp. 2170-2180. ADA366516
7519	Relative-Intensity-Noise Cancellation in Bandpass External-Modulation Links	Helkey, R.	IEEE Trans. Microw. Theory Tech., Vol. 46, No. 12, December 1998, pp. 2083-2091.
7526	TCAS II Use of ADS-B Surveillance Data Through Hybrid Surveillance	Orlando, V.A. Sandholm, R.G. Burgess, D.W.	Air Traffic Control Q., Vol. 7, No. 2, 1999, pp. 109-121.
7528	Characteristics of an Anomalous Orbital Debris Population Inferred from Theoretical Modeling	Lambour, R.L. Sridharan, R.	J. Spacecr. Rockets, Vol. 36, No. 5, September/October 1999, pp. 726-735.
7532	Review of Black Surfaces for Space-Borne Infrared Systems	Persky, M.J.	Rev. Sci. Instrum., Vol. 70, No. 5, May 1999, pp. 2193-2217.

Journal Articles

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7534	Photonic-Crystal Antenna Substrates	Brown, E.R. McMahon, O.B. Parker, C.D.	Linc. Lab. J., Vol. 11, No. 2, 1998, pp. 159-174. ADA369232
7535	Synthetic Aperture Radar Image Coding	Baxter, R.A. Seibert, M.	Linc. Lab. J., Vol. 11, No. 2, 1998, pp. 121-158. ADA369234
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7542	Redundant Trees for Preplanned Recovery in Arbitrary Vertex-Redundant or Edge-Redundant Graphs	Medard, M. Finn, S.G. Barry, R.A. Gallager, R.G.	IEEE/ACM Trans. Netw., Vol. 7, No. 5, October 1999, pp. 641-652.
7545	GPS Performance in Navigation	Misra, P.N. Burke, B.P. Pratt, M.M.	Proc. IEEE, Vol. 87, No. 1, January 1999, pp. 65-85. ADA366434
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Journal Articles

JA No.

7550	Solid-State Color Night Vision: Fusion of Low-Light Visible and Thermal Infrared Imagery	Waxman, A.M. Aguilar, M.J. Fay, D.A. Ireland, D.B. Racamato, J.P., Jr. Ross, W.D. Carrick, J.E. Gove, A.N. Seibert, M. Savoye, E.D. Reich, R.K. Burke, B.E. McGonagle, W.H. Craig, D.M.	Linc. Lab. J., Vol. 11, No. 1, 1998, pp. 41-60. ADA360790
7552	Optical Frequency Conversion Using a Linearized LiNbO ₃ Modulator	Roussell, H.V. Helkey, R.	IEEE Microw. Guid. Wave Lett., Vol. 8, No. 11, November 1998, pp. 408-410.
7554	Linearity and Third-Order Intermodulation Distortion in DFB Semiconductor Lasers	Chen, J.Y. Ram, R.J. Helkey, R.	IEEE J. Quantum Electron., Vol. 35, No. 8, August 1999, pp. 1231-1237.
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7565A	Plasma Enhanced Chemically Vapor Deposited Thin Films or Microelectromechanical Systems Applications with Tailored Optical, Thermal, and Mechanical Properties	Horn, M.W. Goodman, R.B. Rothschild, M.	J. Vac. Sci. Technol. B, Vol. 17, No. 3, May/June 1999, pp. 1045-1049 (Papers from the 17th North American Conf. on Molecular Beam Epitaxy, 4-7 October 1998). ADA369391

Journal Articles

JA No.

7572	A Cell Switching WDM Broadcast LAN with Bandwidth Guarantee and Fair Access	Kam, A.C. Siu, K-Y. Barry, R.A. Swanson, E.A.	J. Lightwave Technol., Vol. 16, No. 12, December 1998, pp. 2265-2280.
7576	Analysis of an Adaptive CFAR Detector in Non-Gaussian Interference	Pulsone, N.B. Raghavan, R.S.	IEEE Trans. Aerosp. Electron. Syst., Vol. 35, No. 3, July 1999, pp. 903-916.
7580	Contoured Elastic-Membrane Microvalves for Microfluidic Network Integration	Young, A.M. Bloomstein, T.M. Palmacci, S.T.	J. Biomech. Eng., Vol. 121, No. 1, February 1999, pp. 2-6.
7589	Estimation of Modulation Based on FM-to-AM Transduction: Two-Sinusoid Case	Torres, W.P. Quatieri, T.F.	IEEE Trans. Signal Process., Vol. 47, No. 11, November 1999, pp. 3084-3097.
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7594	Bromine Ion-Beam-Assisted Etching of III-V Semiconductors	Goodhue, W.D. Royter, Y. Mull, D.E. Choi, S.S. Fonstad, C.G.	J. Electron. Mater., Vol. 28, No. 4, April 1999, pp. 364-368.

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7597	An Adaptive Algorithm for Optimizing the Packet Size Used in Wireless ARQ Protocols	Modiano, E.	Wirel. Netw., Vol. 5, No. 4, July 1999, pp. 279-286.
7598	Architectural Considerations in the Design of WDM-Based Optical Access Networks	Modiano, E. Barry, R.A.	Comput. Networks, Vol. 31, No. 4, 25 February 1999, pp. 327-341.
7600	The Lincoln Near-Earth Asteroid Research (LINEAR) Program	Stokes, G.H. Shelly, F.C. Viggh, H.E.M. Blythe, M.S. Stuart, J.S.	Linc. Lab. J., Vol. 11, No. 1, 1998, pp. 27-40. ADA360759
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7602	Dynamic Range Limitation of Analog External Modulation Links with Complementary Distortion	Helkey, R.	J. Opt. Commun., Vol. 20, No. 4, August 1999, pp. 126-130.
7603	Pre-Clinical Evaluation of a Two-Channel Microwave Hyperthermia System with Adaptive Phase Control in a Large Animal	Gavrilov, L.R. Hand, J.W. Hopewell, J.W. Fenn, A.J.	Int. J. Hyperth., Vol. 15, No. 6, November/December 1999, pp. 495-507.
7605	InAs-Doped Silica Films for Saturable Absorber Applications	Bilinsky, I.P. Fujimoto, J.G. Walpole, J.N. Missaggia, L.J.	Appl. Phys. Lett., Vol. 74, No. 17, 26 April 1999, pp. 2411-2413.

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7607	Mode-Discriminating Photoconductor and Coplanar Waveguide Circuit for Picosecond Sampling	Zamdmer, N. Hu, Q. Verghese, S. Forster, A.	Appl. Phys. Lett., Vol. 74, No. 7, 15 February 1999, pp. 1039-1041.
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7623	Passively Q-Switched Microchip Lasers and Applications	Zayhowski, J.J.	Rev. Laser Eng. (Japan), Vol. 26, No. 12, December 1998, pp. 841-846.
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7629	Sub-100 nm KrF Lithography for Complementary Metal-Oxide-Semiconductor Circuits	Fritze, M. Astolfi, D.K. Liu, H. Chen, C.K. Suntharalingam, V. Preble, D.M. Wyatt, P.W.	J. Vac. Sci. Technol. B, Vol. 17, No. 2, March/April 1999, pp. 345-349 (Papers from the 11th Int. Vacuum Microelectronics Conf., 19-24 July 1998; Papers from the Fourth Int. Plasma-Based Ion Implantation Workshop). ADA366469
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Journal Articles

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7633	Measurement of the Energy Sensitivity of a Superconductive Comparator	Feld, D.A. Sage, J.P. Berggren, K.K. Siddiqui, A.	IEEE Trans. Appl. Supercond., Vol. 9, No. 2, Pt. III, June 1999, pp. 4361-4366 (1998 Applied Superconductivity Conf., 13-18 September 1998).
7634	System Performance of Low-Bias Parallel Modulators	Chen, J.C.	Microw. Opt. Technol. Lett., Vol. 21, No. 5, 5 June 1999, pp. 316-318.
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7639	Recombination Processes in Doubly Capped Antimonide-Based Quaternary Thin Films	Saroop, S. Borrego, J.M. Gutmann, R.J. Charache, G.W. Wang, C.A.	J. Appl. Phys., Vol. 86, No. 3, 1 August 1999, pp. 1527-1534.

Journal Articles

JA No.

7640	Surface Functionalization and Imaging Using Monolayers and Surface-Grafted Polymer Layers	Ingall, M.D.K. Honeyman, C.H. Mercure, J.V. Bianconi, P.A. Kunz, R.R.	J. Am. Chem. Soc., Vol. 121, No. 15, 21 April 1999, pp. 3607-3613.
7641	Narrow-Band Optical A/D Converter with Suppressed Second-Order Distortion	Helkey, R.	IEEE Photonics Technol. Lett., Vol. 11, No. 5, May 1999, pp. 599-601.
7644	The Space-Based Visible Program	Stokes, G.H. von Braun, C. Sridharan, R. Harrison, D.C. Sharma, J.	Linc. Lab. J., Vol. 11, No. 2, 1998, pp. 205-238. ADA369261
7653	Effects of Implant Spacer on InP-Based Self-Aligned Pseudomorphic SIGFETs	Chen, C-L. Mahoney, L.J. Calawa, S.D. Molvar, K.M.	Electron. Lett., Vol. 35, No. 9, 29 April 1999, pp. 746-748.
7654	Optical Detection of Electron Paramagnetic Resonance in Electron-Irradiated GaN	Bozdog, C. Przybylinska, H. Watkins, G.D. Harle, V. Scholz, F. Mayer, M. Kamp, M. Molnar, R.J. Wickenden, A.E. Koleske, D.D. Henry, R.L.	Phys. Rev. B, Condens. Matter, Vol. 59, No. 19, 15 May 1999, pp. 12,479-12,486.
7665	Comparison of Metrology Methods for Quantifying the Line Edge Roughness of Patterned Features	Nelson, C.M. Palmateer, S.C. Forte, A.R. Lysczarz, T.M.	J. Vac. Sci. Technol. B, Vol. 17, No. 6, November/December 1999, pp. 2488-2498 (Papers from the 43rd Int. Conf. on Electron, Ion and Photon Beam Technology and Nanofabrication, 1-4 June 1999).

Journal Articles

JA No.

7666	Molecular-Beam Epitaxial Regrowth on Oxygen-Implanted GaAs Substrates for Device Integration	Chen, C-L. Mahoney, L.J. Calawa, S.D. Molvar, K.M. Maki, P.A. Mathews, R.H. Sage, J.P. Sollner, T.C.L.G.	Appl. Phys. Lett., Vol. 74, No. 26, 28 June 1999, pp. 4058-4060.
7669	High-Quantum-Efficiency 0.5 eV GaInAsSb/GaSb Thermophotovoltaic Devices	Wang, C.A. Choi, H-K. Ransom, S.L. Charache, G.W. Danielson, L.R. DePoy, D.M.	Appl. Phys. Lett., Vol. 75, No. 9, 30 August 1999, pp. 1305-1307.
7670	A New Wide-Band Pulse-Restoration Technique for Digital Fiber-Optic Communication Systems Using Temporal Gratings	Hakimi, H. Hakimi, F. Hall, K.L. Rauschenbach, K.A.	IEEE Photonics Technol. Lett., Vol. 11, No. 8, August 1999, pp. 1048-1050. ADA369268
7671	Preparation of Silicon-on-Gallium Arsenide Wafers for Monolithic Optoelectronic Integration	London, J.M. Loomis, A.H. Ahadian, J.F. Fonstad, C.G.	IEEE Photonics Technol. Lett., Vol. 11, No. 8, August 1999, pp. 958-960.
7677	Time-Resolved Photoluminescence Studies of Free and Donor-Bound Exciton in GaN Grown by Hydride Vapor Phase Epitaxy	Bunea, G.E. Herzog, W.D. Unlu, M.S. Goldberg, B.B. Molnar, R.J.	Appl. Phys. Lett., Vol. 75, No. 6, 9 August 1999, pp. 838-840.
7678	Spatial Pattern of Microchannel Formation in Fused Silica Irradiated by Nanosecond Ultraviolet Pulses	Wright, E.M. Mansuripur, M. Liberman, V. Bates, K.	Appl. Opt., Vol. 38, No. 27, 20 September 1999, pp. 5785-5788.

Journal Articles

JA No.

7681	High-Power High-Brightness GaInAsSb-AlGaAsSb Tapered Laser Arrays with Anamorphic Collimating Lenses Emitting at 2.05 μ m	Walpole, J.N. Choi, H-K. Missaggia, L.J. Liau, Z-L. Connors, M.K. Turner, G.W. Manfra, M.J. Cook, C.C.	IEEE Photonics Technol. Lett., Vol. 11, No. 10, October 1999, pp. 1223-1225.
7684	Low-Frequency Noise in n-GaN with High Electron Mobility	Levinshtein, M.E. Rumyantsev, S.L. Look, D.C. Molnar, R.J. Kahn, M.A. Simin, G. Adivarahan, V. Shur, M.S.	J. Appl. Phys., Vol. 86, No. 9, 1 November 1999, pp. 5075-5078.
7686	Q-Switched Microchip Lasers Find Real-World Application	Zayhowski, J.J.	Laser Focus World, Vol. 35, No. 8, August 1999, pp. 129-136.
7688	Temporal Observation and Diagnostic Use of Double Rayleigh Scattering in Distributed Raman Amplifiers	Chinn, S.R.	IEEE Photonics Technol. Lett., Vol. 11, No. 12, December 1999, pp. 1632-1634.
7695	Power Penalty for Optical Signals Due to Dispersion Slope in WDM Filter Cascades	Kuznetsov, M. Froberg, N.M. Henion, S.R. Rauschenbach, K.A.	IEEE Photonics Technol. Lett., Vol. 11, No. 11, November 1999, pp. 1411-1413.
7701	Mechanism of the Enhanced Thermoelectric Power in (111)-Oriented <i>n</i> -Type PbTe/Pb _{1-x} Eu _x Te Multiple Quantum Wells	Koga, T. Harman, T.C. Cronin, S.B. Dresselhaus, M.S.	Phys. Rev. B, Condens. Matter, Vol. 60, No. 20, 15 November 1999, pp. 14,286-14,293.

Journal Articles

JA No.

7713	GaN Avalanche Photodiodes Grown by Hydride Vapor-Phase Epitaxy	McIntosh, K.A. Molnar, R.J. Mahoney, L.J. Lightfoot, A. Geis, M.W. Molvar, K.M. Melingailis, I. Aggarwal, R.L. Goodhue, W.D. Choi, S.S. Spears, D.L. Vergheese, S.	Appl. Phys. Lett., Vol. 75, No. 22, 29 November 1999, pp. 3485-3487.
7732	Increase in Response Time of Low-Temperature-Grown GaAs Photoconductive Switches at High Voltage Bias	Zamdmer, N. Hu, Q. McIntosh, K.A. Vergheese, S.	Appl. Phys. Lett., Vol. 75, No. 15, 11 October 1999, pp. 2313-2315.

MEETING SPEECHES

MS No.

11709	Constraint Optimization for Partially Adaptive Subspace STAP Algorithms	Baranoski, E.J.	Thirty-Second Asilomar Conf. on Signals, Systems and Computers, Vol. 2, 1-4 November 1998, pp. 1527-1531.
12610	NPOESS Airborne Sounder Testbed (NAST) Infrared Spectrometer Design	Prutzer, S. Ryan-Howard, D.P. Garcia, J.G. Bold, D.R.	1998 IEEE Aerospace Conf. Proc., Vol. 5, 21-28 March 1998, pp. 171-182.
12654	Applying Electro-Optical Space Surveillance Technology to Asteroid Search and Detection: The Linear Program Results	Viggh, H.E.M. Stokes, G.H. Shelly, F.C. Blythe, M.S. Stuart, J.S.	Proc. Int. Conf. on Lasers '97, 15-19 December 1997, pp. 914-927.
12684	Simulation of Dye-Enhanced Near-IR Transillumination Imaging of Tumors	Braunstein, M. Chan, R.W. Levine, R.Y.	Proc. 19th Annual Int. Conf. of the IEEE Engineering in Medicine and Biology Society, Magnificent Milestones and Emerging Opportunities in Medical Engineering, Vol. 2, 30 October – 2 November 1997, pp. 735-739.
12722	Throughput Analysis of Unscheduled Multicast Transmissions in WDM Broadcast-and-Select Networks	Modiano, E.	1998 IEEE Int. Symp. on Information Theory, 16-21 August 1998, p. 167.
12746	Information Fusion with Constrained Equivocation	Hurley, M.B.	Proc. 1998 IRIS Natl. Symp. on Sensor and Data Fusion, Vol. 1, 31 March – 2 April 1998, pp. 159-170.

Meeting Speeches

MS No.

12780A	Application of Parallel Processors to Real-Time Sensor Array Processing	Martinez, D.R.	Proc. 13th Int. Parallel Processing Symp. and 10th Symp. on Parallel and Distributed Processing, 12-16 April 1999, pp. 463-469.
12800	Critical Issues in 157 nm Lithography	Bloomstein, T.M. Rothschild, M. Kunz, R.R. Hardy, D.E. Goodman, R.B.	J. Vac. Sci. Technol. B, Vol. 16, No. 6, November/December 1998, pp. 3154-3157 (42nd Int. Conf. on Electron, Ion, and Photon Beam Technology and Nanofabrication, 26-29 May 1998).
12821	Adaptive Sidelobe Blanker: A Novel Method of Performance Evaluation and Threshold Setting in the Presence of Inhomogenous Clutter	Kreithen, D.E. Pearson, C.F.K. Richmond, C.D.	Thirty-Second Asilomar Conf. on Signals, Systems and Computers, Vol. 1, 1-4 November 1998, pp. 528-532.
12842	Adaptive Array Processing for Wideband Nulling in GPS Systems	Hatke, G.F.	Thirty-Second Asilomar Conf. on Signals, Systems and Computers, Vol. 2, 1-4 November 1998, pp. 1332-1336.
12855	Multidimensional Sidelobe Target Editing with Applications to Terrain Scattered Jamming Cancellation	Rabideau, D.J.	Ninth IEEE Signal Processing Workshop on Statistical Signal and Array Processing, 14-16 September 1998, pp. 252-255.
12880	Cooled Yb:YAG for High-Power Solid State Lasers	Fan, T.Y. Crow, T. Hoden, B.	SPIE, Vol. 3381, Airborne Laser Advanced Technology, 13-14 April 1998, pp. 200-205.

Meeting Speeches

MS No.

12882	Magnetically Tunable Superconducting Resonators and Filters	Oates, D.E. Dionne, G.F.	IEEE Trans. Appl. Supercond., Vol. 9, No. 2, Pt. III, June 1999, pp. 4170-4175 (1998 Applied Superconductivity Conf., 13-18 September 1998).
12885	Reducing Electronic Multiplexing Costs in Unidirectional SONET/WDM Ring Networks via Efficient Traffic Grooming	Chiu, A.L. Modiano, E.	IEEE Globecom 1998 – The Bridge to the Global Integration, 8-12 November 1998, pp. 322-327.
12891	Testing of Optical Materials for 193-nm Applications	Liberman, V. Rothschild, M. Sedlacek, J.H.C. Uttaro, R.S. Grenville, A. Bates, A.K. Van Peski, C.	SPIE, Vol. 3427, Optical Systems Contamination and Degradation, 20-23 July 1998, pp. 411-418. ADA366551
12899	Assessment of Optical Coatings for 193-nm Lithography	Liberman, V. Rothschild, M. Sedlacek, J.H.C. Uttaro, R.S. Grenville, A. Bates, A.K. Van Peski, C.	SPIE, Vol. 3334, Optical Microlithography XI, 25-27 February 1998, pp. 470-479. ADA360731
12902	Evaluation of Critical Current Density of Nb/Al/AlO _x /Nb Josephson Junctions Using Test Structures at 300 K	Berggren, K.K. O'Hara, M.J. Sage, J.P. Worsham, A.H.	IEEE Trans. Appl Supercond., Vol. 9, No. 2, Pt. III, June 1999, pp. 3236-3239 (1998 Applied Superconductivity Conf., 13-18 September 1998).
12921	The Lincoln High Density Radar Receiver Enclosure: Thermal and Power Systems Design	Johnson, D.C. Palmer, J.S. Rutherford, L.L.	SPIE, Vol. 3582, 1998 Int. Symp. on Microelectronics, 1-4 November 1998, pp. 162-167.

Meeting Speeches

MS No.

12934	Accuracy and Resolution Bounds for Adaptive Sensor Array Processing	Smith, S.T.	Ninth IEEE Signal Processing Workshop on Statistical Signal and Array Processing, 14-16 September 1998, pp. 37-40.
12942	Transmit Filters for Wireless Basestations	Anderson, A.C. Wu, H. Ma, Z. Polakos, P.A. Mankiewich, P.M. Barfknecht, A. Kaplan, T.	IEEE Trans. Appl. Supercond., Vol. 9, No. 2, Pt. III, June 1999, pp. 4006-4009 (1998 Applied Superconductivity Conf., 13-18 September 1998).
12944	Measurements and Modeling of Microwave Impedance of High-T _c Grain Boundaries	Oates, D.E. Habib, Y.M. Lehner, C.J. Vale, L.R. Ono, R.H. Dresselhaus, G. Dresselhaus, M.S.	IEEE Trans. Appl. Supercond., Vol. 9, No. 2, Pt. II, June 1999, pp. 2446-2451 (1998 Applied Superconductivity Conf., 13-18 September 1998).
12948	Ultrafast Time Division Multi-Access Networks	Hall, K.L. Rauschenbach, K.A. Finn, S.G.	SPIE, Vol. 3491, Applications of Photonic Technology 3, Closing the Gap Between Theory, Development, and Application, 29-31 July 1998, pp. 482-490.
12956	Hydride Vapor Phase Epitaxial Growth of III-V Nitrides	Molnar, R.J.	Chapter 1 in <i>Semiconductors and Semimetals, Vol. 57, Gallium Nitride (GaN) II</i> , Academic Press, 1999, pp. 1-31.
12971	Recent Progress in GaInAsSb Thermophotovoltaics Grown by Organometallic Vapor-Phase Epitaxy	Wang, C.A. Choi, H-K. Oakley, D.C. Charache, G.W.	J. Cryst. Growth, Vol. 195, No. 1-4, December 1998, pp. 346-355 (Proc. of the Ninth Int. Conf. on Metalorganic Vapour Phase Epitaxy, 31 May – 4 June 1998).

Meeting Speeches

MS No.

12973	In Situ Monitoring of GaSb, GaInAsSb, and AlGaAsSb	Vineis, C.J. Wang, C.A. Jensen, K.F. Breiland, W.G.	J. Cryst. Growth, Vol. 195, No. 1-4, December 1998, pp. 181-186 (Proc. of the Ninth Int. Conf. on Metalorganic Vapour Phase Epitaxy, 31 May – 4 June 1998).
12982	Magnetic Design for Low-Field Tunability of Microwave Ferrite Resonators	Dionne, G.F. Oates, D.E.	J. Appl. Phys., Vol. 85, No. 8, 15 April 1999, pp. 4856-4858 (43rd Annual Conf. on Magnetism and Magnetic Materials, 9-12 November 1998). ADA366550
12985	Origin of Exchange Field Reductions in Diluted Magnetic Garnets	Dionne, G.F.	J. Appl. Phys., Vol. 85, No. 8, 15 April 1999, pp. 4627-4629 (43rd Annual Conf. on Magnetism and Magnetic Materials, 9-12 November 1998).
12996	Optical Fiber Ring 150 Gbps Data Storage Loop and Spontaneous Variable-Length-Pattern Generator	Moores, J.D.	IEEE/LEOS 1998 Summer Topical Mtg., Broadband Optical Networks and Technologies: An Emerging Reality, 20-22 July 1998, pp. 23-24.
13013	Extending the Cutoff Wavelength of Lattice-Matched GaInAsSb/GaSb Thermophotovoltaic Devices	Wang, C.A. Choi, H-K. Oakley, D.C. Charache, G.W.	AIP Conf. Proc., No. 460, Thermophotovoltaic Generation of Electricity: Fourth NREL Conf., October 1998, pp. 256-265.
13016	Performance Enhancement for TCP/IP on a Satellite Channel	Stadler, J.S. Gelman, J.R.	IEEE MILCOM '98, Vol. 1, 19 October 1998, pp. 270-276.

Meeting Speeches

MS No.

13049	Low T_c Superconductive Circuits Fabricated on 150-mm-Diameter Wafers Using a Doubly Planarized Nb/ AlO_x /Nb Process	Berggren, K.K. Macedo, E.M. Feld, D.A. Sage, J.P.	IEEE Trans. Appl. Supercond., Vol. 9, No. 2, Pt. III, June 1999, pp. 3271-3274 (1998 Applied Superconductivity Conf., 13-18 September 1998).
13071	First Demonstration of Correlation in a Niobium Superconductive Programmable Binary-Analog Matched Filter	Sage, J.P. Feld, D.A.	IEEE Trans. Appl. Supercond., Vol. 9, No. 2, Pt. III, June 1999, pp. 4367-4372 (1998 Applied Superconductivity Conf., 13-18 September 1998).
13075	The Photomixer Transceiver	Verghese, S. McIntosh, K.A. Calawa, S.D. DiNatale, W.F. Duerr, E.K. Mahoney, L.J.	SPIE, Vol. 3617, Terahertz Spectroscopy and Applications, 25-26 January 1999, pp. 7-13.
13075A	Generation and Detection of THz Waves with Photomixers	Verghese, S. McIntosh, K.A. Duerr, E.K.	SPIE, Vol. 3828, Terahertz Spectroscopy and Applications II, 16-18 June 1999, pp. 118-124.
13077	Linearization of a Broadband Analog Optical Link Using Multiple Wavelengths	Ackerman, E.I.	IEEE Int. Topical Mtg. on Microwave Photonics, MWP'98, 12-14 October 1998, pp. 45-48.
13081	Propagation of a 10 Gbps RZ Bit Stream in a Circulating Loop Using TrueWave TM and DCF with 100 km EDFA Spacing	Korn, J.	LEOS'98, IEEE Lasers and Electro-Optics Society 1998 Annual Mtg., Vol. 1, 1-4 December 1998, pp. 14-15.
13094A	SAR and HSI Data Fusion for Counter CC&D	Hsu, S.M. Kerekes, J.P. Burke, H-H.K. Crooks, S.M.	1999 IEEE Radar Conf., 20-22 April 1999, pp. 218-220.

Meeting Speeches

MS No.

13097	Ultrafast TDM Transmission	Moores, J.D.	LEOS'98, IEEE Lasers and Electro-Optics Society 1998 Annual Mtg., Vol. 1, 1-4 December 1998, pp. 12-13.
13115	Design and Analysis of an Asynchronous WDM Local Area Network Using a Master/Slave Scheduler	Modiano, E. Barry, R.A.	IEEE INFOCOM '99, Proc. of the 18th Annual Joint Conf. of the IEEE Computer and Communications Societies: The Future is Now, Vol. 2, 21-25 March 1999, pp. 900-907.
13140	Optimal Soft-Decision Decoding for a 1-Bit A/D Channel	Schodorf, J.B.	1999 IEEE Int. Conf. on Communications, Vol. 2, 6-10 June 1999, pp. 1172-1176.
13144	State of the Art in Analog Fiber-Optic Link Technology	Ackerman, E.I. Cox, C.H. III	1998 URSI Int. Symp. on Signals, Systems, and Electronics, 29 September – 2 October 1998, pp. 372-377.
13145	3-D Emitter Localization Using Inhomogenous Bistatic Scattering	Coutts, S.D.	ICASSP'99, Proc. IEEE Int. Conf. on Acoustics, Speech and Signal Processing, Vol. III, 15-19 March 1999, pp. 1509-1512.
13146	Marathon Testing of Optical Materials for 193-nm Lithographic Applications	Liberman, V. Rothschild, M. Sedlacek, J.H.C. Uttaro, R.S. Bates, A.K. Van Peski, C.	SPIE, Vol. 3578, Laser-Induced Damage in Optical Materials, 28 September – 1 October 1998, pp. 2-15. ADA369212

Meeting Speeches

MS No.

13159	Broadband Optical Network Technology for Next Generation LAN and Access Systems	Rauschenbach, K.A. Modiano, E. Hall, K.L. Finn, S.G. Moores, J.D.	LEOS'98, IEEE Lasers and Electro-Optics Society 1998 Annual Mtg., Vol. 2, 1-4 December 1998, pp. 230-231.
13179	Enhanced HAWK High Power Illuminator for Field Data Collections	Dolan, P.D. Borison, S.L. Payson, H.C. Giunta, M.	1999 IEEE Radar Conf., 20-22 April 1999, pp. 321-325.
13180	Circular Array STAP	Zatman, M.A.	1999 IEEE Radar Conf., 20-22 April 1999, pp. 108-113.
13184	Automatic Speaker Clustering from Multi-Speaker Utterances	McLaughlin, J.J. Reynolds, D.A. Singer, E. O'Leary, G.C.	ICASSP'99, Proc. IEEE Int. Conf. on Acoustics, Speech and Signal Processing, Vol. II, 15-19 March 1999, pp. 817-820.
13189	A Spectral 2-D Wold Decomposition Algorithm for Homogeneous Random Fields	Liu, F. Picard, R.W.	ICASSP'99, Proc. IEEE Int. Conf. on Acoustics, Speech and Signal Processing, Vol. VI, 15-19 March 1999, pp. 3501-3504.
13197	Outlook for 157-nm Resist Design	Kunz, R.R. Bloomstein, T.M. Hardy, D.E. Goodman, R.B. Downs, D.K. Curtin, J.E.	SPIE, Vol. 3678, Part One, Microlithography 1999: Advances in Resist Technology and Processing XVI, 15-17 March 1999, pp. 13-23.
13198	Performance of a Phase-Shift Focus Monitor Reticle Designed for 193-nm Use	Kunz, R.R. Chan, M.Y. Doran, S.P.	SPIE, Vol. 3679, Part One, Optical Microlithography XII, 17-19 March 1999, pp. 108-115.

Meeting Speeches

MS No.

13205	P-3 Ultra-Wideband SAR, Grayling, Michigan, Target and Clutter Phenomenology	Bessette, L.A. Crooks, S.M. Ayasli, S.	1999 IEEE Radar Conf., 20-22 April 1999, pp. 125-129.
13206	Optical Materials and Coatings at 157 nm	Bloomstein, T.M. Liberman, V. Rothschild, M. Hardy, D.E. Goodman, R.B.	SPIE, Vol. 3676, Part One, Emerging Lithographic Technologies III, 15-17 March 1999, pp. 342-349. ADA369284
13207	A Computationally-Efficient Two-Step Implementation of the GLRT Detector	Pulsone, N.B. Zatman, M.A.	ICASSP'99, Proc. IEEE Int. Conf. on Acoustics, Speech and Signal Processing, Vol. III, 15-19 March 1999, pp. 1161-1164.
13209	Implications of Glottal Source for Speaker and Dialect Identification	Yanguas, L.R. Quatieri, T.F. Goodman, F.	ICASSP'99, Proc. IEEE Int. Conf. on Acoustics, Speech and Signal Processing, Vol. II, 15-19 March 1999, pp. 813-816.
13211	Perfect Reconstruction Time-Scaling Filterbanks	Quatieri, T.F. Hanna, T.E.	ICASSP'99, Proc. IEEE Int. Conf. on Acoustics, Speech and Signal Processing, Vol. III, 15-19 March 1999, pp. 945-948.
13212	A Two Trillion Operations per Second Miniaturized Mixed Signal Radar Receiver/Processor	Song, W.S.	Thirty-Second Asilomar Conf. on Signals, Systems and Computers, Vol. 2, 1-4 November 1998, pp. 1002-1006.
13213	Fundamental SAR ATR Performance Predictions for Design Tradeoffs: 1-D HRR Versus 2-D SAR Versus 3-D SAR	Horowitz, L.L. Brendel, G.F.	SPIE, Vol. 3721, Algorithms for Synthetic Aperture Radar Imagery VI, 5-9 April 1999, pp. 763-775.

Meeting Speeches

MS No.

13220	Developments in X-Ray and Astronomical CCD Imagers	Gregory, J.A. Burke, B.E. Kosicki, B.B. Reich, R.K.	Nucl. Instrum. Methods Phys. Res. Methods No. 1/2, 21 October 1999, pp. 1-8 (Proc. 7th. Int. Conf. on Solid State Detectors, 4-6 December 1998).
13238	Long-Term 193-nm Laser-Induced Degradation of Fused Silica and Calcium Fluoride	Liberman, V. Rothschild, M. Sedlacek, J.H.C. Uttaro, R.S. Bates, A.K. Van Peski, C.	SPIE, Vol. 3679, Part Two, Optical Microlithography XII, 17-19 March 1999, pp. 1137-1145. ADA369276
13248	Pattern Asymmetries in Phase-Edge Imaging	Fritze, M. Cann, S.G. Wyatt, P.W.	SPIE, Vol. 3679, Part Two, Optical Microlithography XII, 17-19 March 1999, pp. 567-581. ADA369271
13250	Photon Statistics of NRZ Signals in a High-Bit-Rate Optically Pre-Amplified Direct Detection Receiver	Wong, W.S. Moores, J.D. Korn, J. Haus, H.A.	Optical Fiber Communication Conf. and the Int. Conf. on Integrated Optics and Optical Fiber Communication (OFC/IOOC'99), 21-26 February 1999, pp. 265-267.
13257	Screening of DNQ/Novolac Resists with E-Beam Exposure	Fedynyshyn, T.H. Doran, S.P. Lind, M.L. Lysczarz, T.M. DiNatale, W.F. Lennon, D.M. Sauer, C. Meute, J.	SPIE, Vol. 3678, Part Two, Microlithography 1999: Advances in Resist Technology and Processing XVI, 15-17 March 1999, pp. 1273-1283. ADA369281
13264A	A Nyquist-Rate Pipelined Oversampling A/D Converter	Paul, S.A. Lee, H-S. Goodrich, J. Alailima, T.F. Santiago, D.D.	1999 IEEE Int. Solid-State Circuits Conf., Digest of Technical Papers, 15-17 February 1999, pp. 54-55 & 445.

Meeting Speeches

MS No.

13275	Template-Based SAR ATR Performance Using Different Image Enhancement Techniques	Owirka, G.J. Verbout, S.M. Novak, L.M.	SPIE, Vol. 3721, Algorithms for Synthetic Aperture Radar Imagery VI, 5-9 April 1999, pp. 302-319.
13286	Metrology Methods for Quantifying Edge Roughness II	Nelson, C.M. Palmateer, S.C. Forte, A.R. Cann, S.G. Deneault, S.J. Lysczarz, T.M.	SPIE, Vol. 3677, Part One, Metrology, Inspection, and Process Control for Microlithography XIII, 15-18 March 1999, pp. 53-61.
13287	A Study of Resist Outgassing as a Function of Differing Photoadditives	Houlihan, F.M. Rushkin, I.L. Hutton, R.S. Timko, A.G. Nalamasu, O. Reichmanis, E. Gabor, A.H. Medina, A.N. Malik, S. Neiser, M. Kunz, R.R. Downs, D.K.	SPIE, Vol. 3678, Part One, Microlithography 1999: Advances in Resist Technology and Processing XVI, 15-17 March 1999, pp. 264-274.
13291	An Efficient Multi-Target SAR ATR Algorithm	Novak, L.M. Owirka, G.J. Brower, W.S.	Thirty-Second Asilomar Conf. on Signals, Systems and Computers, Vol. 1, 1-4 November 1998, pp. 3-13.
13306	A New Model for the Doppler Spectrum of Windblown Radar Ground Clutter	Lombardo, P. Billingsley, J.B.	1999 IEEE Radar Conf., 20-22 April 1999, pp. 142-147.
13307	A FT-IR Method to Determine Dill's C Parameter for DNQ/Novolac Resists with E-Beam and I-Line Exposure	Fedynyshyn, T.H. Doran, S.P. Mack, C.A.	SPIE, Vol. 3678, Part Two, Microlithography 1999: Advances in Resist Technology and Processing XVI, 15-17 March 1999, pp. 1263-1272.

Meeting Speeches

MS No.

13315	A Signal Processing Architecture for Space-Based GMTI Radar	Rabideau, D.J. Kogon, S.M.	1999 IEEE Radar Conf., 20-22 April 1999, pp. 96-101.
13325	Space-Time Adaptive Processing with Sparse Antenna Arrays	Ward, J.	Thirty-Second Asilomar Conf. on Signals, Systems and Computers, Vol. 2, 1-4 November 1998, pp. 1537-1541.
13330	An Optimal Generalized Theory of Signal Representation	Goldstein, J.S. Guerci, J.R. Reed, I.S.	ICASSP'99, Proc. IEEE Int. Conf. on Acoustics, Speech and Signal Processing, Vol. III, 15-19 March 1999, pp. 1357-1360.
13389	Investigation of Alternates to SiO_x for Protective Scan Mirror Coatings in Remote Sensing Instruments	MacDonald, M.E.	SPIE, Vol. 3750, Earth Observing Systems IV, 18-20 July 1999, pp. 309-318.
13391	Broadband Linearization of a Mach-Zehnder Electro-Optic Modulator	Ackerman, E.I.	1999 IEEE MTT-S Int. Microwave Symp. Digest, Vol. 3, 13-19 June 1999, pp. 999-1002.
13396	Performance Assessment Software for the EO-1 Advanced Land Imager	Viggh, H.E.M. Stuart, J.S. Sayer, R.W. Evans, J.B. Mendenhall, J.A. Gibbs, M.D.	SPIE, Vol. 3750, Earth Observing Systems IV, 18-20 July 1999, pp. 141-152.
13397	Radiometric Calibration Pipeline for the EO-1 Advanced Land Imager	Evans, J.B. Viggh, H.E.M.	SPIE, Vol. 3750, Earth Observing Systems IV, 18-20 July 1999, pp. 153-161.
13398	An Automated Ground Data Acquisition and Processing System for Calibration and Performance Assessment of the EO-1 Advanced Land Imager	Viggh, H.E.M. Mendenhall, J.A. Sayer, R.W. Stuart, J.S. Gibbs, M.D.	SPIE, Vol. 3750, Earth Observing Systems IV, 18-20 July 1999, pp. 132-140.

Meeting Speeches

MS No.

13400	Spatial Calibration of the EO-1 Advanced Land Imager	Hearn, D.R. Mendenhall, J.A. Willard, B.C.	SPIE, Vol. 3750, Earth Observing Systems IV, 18-20 July 1999, pp. 97-108.
13401	Vacuum Window Optical Power Induced by Temperature Gradients	Hearn, D.R.	SPIE, Vol. 3750, Earth Observing Systems IV, 18-20 July 1999, pp. 297-308.
13410	Photonic Remoting of the Kwajalein Missile Range Post-Impact Telemetry System	Abouzahra, M.D. Robey, F.C. Henion, S.R.	ITC/USA'99, Int. Telemetering Conf., "Telemetry: Meeting the 21st Century Challenge," Part 1, 25-28 October 1999, pp. 433-442.
13412	Noise Performance of the NPOESS Airborne Sounder Testbed Interferometer (NAST-I) Sounder: Flight and Model Results	Kelly, M.W. Gazarik, M.J. Marino, R.M.	SPIE, Vol. 3750, Earth Observing Systems IV, 18-20 July 1999, pp. 260-268.
13417	Wide Field-of-View Schmidt-Sphere Imaging Collimator	Willard, B.C.	SPIE, Vol. 3750, Earth Observing Systems IV, 18-20 July 1999, pp. 286-296.
13447	Intrapixel Response Test System for Multispectral Characterization	Lind, T.A. Reich, R.K. McGonagle, W.H. Kosicki, B.B.	SPIE, Vol. 3649, Sensors, Cameras, and Systems for Scientific/Industrial Applications, 25-26 January 1999, pp. 232-238.
13449	Materials Issues for Optical Components and Photomasks in 157 nm Lithography	Liberman, V. Bloomstein, T.M. Rothschild, M. Sedlacek, J.H.C. Uttaro, R.S. Bates, A.K. Van Peski, C. Orvek, K.	J. Vac. Sci. Technol. B, Vol. 17, No. 6, November/December 1999, pp. 3273-3279 (Papers from the 43rd Int. Conf. on Electron, Ion and Photon Beam Technology and Nanofabrication, 1-4 June 1999).

Meeting Speeches

MS No.

13453	Spectral Calibration of the EO-1 Advanced Land Imager	Mendenhall, J.A. Parker, A.C.	SPIE, Vol. 3750, Earth Observing Systems IV, 18-20 July 1999, pp. 109-116.
13454	Radiometric Calibration of the EO-1 Advanced Land Imager	Mendenhall, J.A. Lencioni, D.E. Parker, A.C.	SPIE, Vol. 3750, Earth Observing Systems IV, 18-20 July 1999, pp. 117-131.
13463	EO-1 Advanced Land Imager Calibration and Performance Overview	Lencioni, D.E. Hearn, D.R. Mendenhall, J.A. Bicknell, W.E.	SPIE, Vol. 3750, Earth Observing Systems IV, 18-20 July 1999, pp. 89-96.
13469	EO-1 Advanced Land Imager	Bicknell, W.E. Digenis, C.J. Forman, S.E. Lencioni, D.E.	SPIE, Vol. 3750, Earth Observing Systems IV, 18-20 July 1999, pp. 80-88.
13482	Field Programmable Gate Array Based Radar Front-End Digital Signal Processing	Moeller, T.J. Martinez, D.R.	Seventh Annual IEEE Symp. on Field-Programmable Custom Computing Machines (FCCM '99), 21-23 April 1999, pp. 178-187.
13493	Transmultiplexers: A Unifying Time-Frequency Tool for TDMA, FDMA, and CDMA Communications	Hetling, K.J. Saulnier, G.J. Akansu, A.N. Lin, X.	Chapter 1 in <i>Wavelet, Subband and Block Transforms in Communications and Multimedia</i> , Kluwer Academic Publishers, 1999, pp. 1-24.
13498	A Compact, Active Hyperspectral Imaging System for the Detection of Concealed Targets	Johnson, B. Joseph, R.M. Nischan, M. Newbury, A.B. Kerekes, J.P. Barclay, H.T. Willard, B.C. Zayhowski, J.J.	SPIE, Vol. 3710, Part One, Detection and Remediation Technologies for Mines and Minelike Targets IV, 5-9 April 1999, pp. 144-153.

Meeting Speeches

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13515	Precision Radar Surveillance and Mapping with Discoverer II	Koss, J. Pohlig, S.C. Trichel, M. Jeffrey, W.	AIAA Space Technology Conf. and Exposition, 28-30 September 1999, pp. 1-10.
13519	157 nm: Deepest Deep-Ultraviolet Yet	Rothschild, M. Bloomstein, T.M. Curtin, J.E. Downs, D.K. Fedynyshyn, T.H. Hardy, D.E. Kunz, R.R. Liberman, V. Sedlacek, J.H.C. Uttaro, R.S. Bates, A.K. Van Peski, C.	J. Vac. Sci. Technol. B, Vol. 17, No. 6, November/December 1999, pp. 3262-3266 (Papers from the 43rd Int. Conf. on Electron, Ion and Photon Beam Technology and Nanofabrication, 1-4 June 1999).
13520	Distortion-Invariant FOPEN Detection Filter Improvements	Casasent, D. Ippolito, K. Verly, J.G.	SPIE, Vol. 3721, Algorithms for Synthetic Aperture Radar Imagery VI, 5-9 April 1999, pp. 261-271.
13722	Subband-Domain Signal Processing for Radar Array Systems	Rabinkin, D.V. Pulsone, N.B.	SPIE, Vol. 3807, Advanced Signal Processing Algorithms, Architectures, and Implementations IX, 19-21 July 1999, pp. 174-187.
13853	Demonstration of Terahertz Water-Vapor Spectroscopy with a Photomixer Transceiver	McIntosh, K.A. Vergheese, S.	SPIE, Vol. 3794, Materials and Electronics for High-Speed and Infrared Detectors, 19-20 & 23 July 1999, pp. 16-24.

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